Before the

Federal Communications Commission

Washington, D.C. 20554

In the Matter of	)	
	)	
Deployment of Wireline Services Offering	)	CC Docket No. 98-147
Advanced Telecommunications Capability	)	
	)	

COMMENTS OF NETWORK ACCESS SOLUTIONS

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SUMMARY

As part of its ongoing proceeding to remove barriers to competition in the market for advanced wireline telecommunications services, the Commission has solicited comment on two areas of importance to DSL providers. First, the Commission seeks reinforcement for its tentative conclusion that it should mandate line sharing, that is, the ability of a requesting carrier to gain access to the high-frequency capacity of a local loop over which an ILEC is providing local exchange service. Second, the Commission seeks ways to extend and improve its interim rules on spectrum compatibility and spectrum management to give order to the deployment of the wide variety of DSL technologies that are available today and that may be developed in the future.

Network Access Solutions is an industry leader in the provision of DSL service. With collocation arrangements in Bell Atlantic central offices throughout the mid-Atlantic region, NAS is constructing a DSL backbone that, by the end of the year, may give it access to more potential DSL end users in the Bell Atlantic region than any other provider, including Bell Atlantic itself. The Commission's interconnection and collocation orders have been critical to this achievement. However, interconnection and collocation are only the first steps in providing service, and many potential barriers remain.

In these comments, we offer support for the Commission's tentative conclusion to order line sharing. In particular, we first describe the public interest in line sharing, which flows from its beneficial effect on residential DSL competition and efficient use of the local loop, and the immediate need for mandatory line sharing. Next, we discuss three ways in which the Commission can remove this barrier to competition:

- Line sharing may be implemented through frequency-unbundled network elements, since ILECs' failure to provide access to these network elements will "impair" the ability of requesting carriers to provide DSL service;

- Line sharing may be implemented under the prohibitions in Sections 201 and 202 against unjust, unreasonable, and discriminatory practices since ILECs' refusal to share loops violates those proscriptions;

- Line sharing may be implemented under the Commission's Section 201 authority to prohibit unlawful tying arrangements since ILECs are leveraging their market power in exchange service to unlawfully suppress competition in the DSL market.

Regarding spectrum management and spectrum compatibility, we offer the following suggestions to permit the deployment of DSL technologies while protecting other advanced services and existing voice-grade services:

- The Commission should permit the unrestricted deployment of any DSL technology that complies with an existing standard PSD mask, or with any new standard PSD mask to be developed by ANSI Working Group T1E1.4;

- The Commission should apply a rebuttable presumption to any DSL loop technology that has been successfully deployed in any market that it is acceptable for deployment anywhere, even if does not comply with an industry standard PSD mask;

- Incumbent LECs should be required to enter into a limited-duration test of any new DSL technology upon request and the successful completion of such a test should give rise to a presumption that the DSL technology is acceptable for deployment;

- The use of loop binder group management rules by incumbent LECs should be prohibited.

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Network Access Solutions ("NAS") provides telecommunications service in a highly focused product and geographic market. The company's product market is the provision of advanced data transmission services using DSL technology. The geographic market in which it provides service is Bell Atlantic's local exchange territory.

Although NAS began providing service on a commercial basis only this year, already it has collocation arrangements in 116 Bell Atlantic central offices. By September 1, it will have operational collocation arrangements in 322 central offices, and by the end of the year NAS will be collocated in more than 360 Bell Atlantic central offices in nine metropolitan areas.[1]

In this proceeding, the Commission seeks comment on proposed rules governing two matters of importance to CLECs that provide DSL service. The first concerns line sharing, which is an arrangement under which an ILEC and CLEC offer services to a given end user over different

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1. Boston, New York, Philadelphia, Pittsburgh, Wilmington, Baltimore, the District of Columbia, Richmond and Norfolk.

frequencies in the same loop. The ILECs' failure to permit line sharing is the most significant barrier to competition in the residential DSL market today. In Part I, we discuss several ways in which the Commission can remove this barrier, and we urge the Commission to do so expeditiously. The second set of issues deals with spectrum management, which is a system of rules to ensure that DSL services can coexist with other services without causing harmful interference. In Part II, we provide a framework for spectrum management that will facilitate deployment of advanced service technologies while assuring protection to all other services, including advanced services and exchange services.

I. THE FCC SHOULD REQUIRE AN ILEC THAT PROVIDES EXCHANGE SERVICE OVER A GIVEN LOOP TO LET A CLEC USE OTHER FREQUENCIES ON THAT LOOP TO PROVIDE DSL SERVICE

Most of the transmission bandwidth on ILEC loops lies fallow since traditional voice telephony uses only the low-frequency band below 4 kHz. Services that use many DSL technologies, including ADSL and RADSL, tap into this unused resource since they transmit data using frequencies *above* the voice band. By dividing a loop's transmission bandwidth into a low-frequency and a high-frequency band, with an appropriate guard band between the two, most loops are capable of supporting both ordinary exchange service and advanced DSL service simultaneously.[2]

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2. A small percentage of ILEC loops are not capable of supporting DSL transmissions. For example, loops with more than 18,000 feet of copper (24,000 feet in the case of some DSL technologies) will not support DSL. Moreover, certain loops contain equipment, such as load coils and bridged taps, that suppresses a portion of the high-frequency bandwidth and must be "conditioned" for DSL service by removing the encumbering equipment before they will support DSL transmissions.

Currently, ILECs hoard this vast unused loop resource for themselves. They do not permit CLECs to use, for the provision of DSL service to a customer, the unused high-frequency portion of a loop that the ILEC uses to provide exchange service to that customer. However, while they prohibit CLECs from providing DSL service to ILEC exchange customers over a single loop, they provide their *own* DSL and exchange services over a single loop. To view the matter another way, a customer desiring to subscribe to DSL service while retaining exchange service from the ILEC can choose either to subscribe to the ILEC's DSL offering, which shares the same loop to which the customer already subscribes, or a CLEC's DSL offering, which requires an additional loop. In the first case, the customer must pay for one loop, and in the second case, two loops.

A. The Public Will Benefit From Mandatory Line Sharing

Requiring that an ILEC share with a CLEC a loop that the ILEC uses to provide exchange service to a given end user so that the CLEC and provide that user with DSL service will benefit the public in two important ways. Each is discussed below.

1. Line Sharing Will Facilitate Competition in the Residential DSL Market.

First, line sharing will make competition possible in the residential DSL market. Competition in this market is unlikely if ILECs do not let a CLEC provide DSL service to an ILEC exchange service customer over the same loop the ILECs use to provide exchange service because of the huge cost advantage that ILECs then have. The ability of an ILEC to provide an exchange service customer with DSL service over the customer's exchange service loop gives ILECs a cost advantage since it permits them to recover in the price of exchange service the entire cost of the loop they use to provide DSL service, thereby eliminating the need to recover any loop costs in the price

they charge for DSL service. By contrast, a CLEC must recover the entire loop cost in the price it charges for DSL service. Since ILECs typically charge about $40 per month for residential DSL service and CLECs must pay between $12 and $18 per month in most states for a loop, the cost advantage an ILEC gains from providing DSL and exchange service over a single loop plainly is significant. It is not realistic to expect that a CLEC can beat an ILEC's DSL service price under these circumstances.

Although a CLEC can reduce the loop costs applicable to its DSL offering if it uses the loops it obtains from an ILEC to provide its customers with both DSL service and exchange service, doing so does not permit CLECs to compete effectively with ILECs in the residential DSL market because of the market power of ILECs in the residential exchange market. While an ILEC can capture an end user as a DSL customer by convincing that user to subscribe to the ILEC's DSL offering *alone*, a CLEC desiring to compete in the residential DSL market under these terms either must (i) confine its DSL marketing to end users that already subscribe to its exchange offering (or that of another CLEC with which it has entered into a joint services arrangement), or (ii) convince its prospective DSL customers not only to subscribe to its DSL service but *also* to its *exchange service.* A CLEC that confined its marketing to consumers who already have subscribed to the exchange offering of a CLEC would exclude itself from marketing DSL service to 99 percent of all residences even if the CLEC were able to enter into joint service arrangements with *every* CLEC in America since CLECs provide exchange service to less than one percent of all residential lines.[3] A CLEC that sought to market its DSL service to exchange service customers of *both* CLECs *and* ILECs would be in no

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3. FCC Common Carrier Bureau, Industry Analysis Division, *Local Competition*, Tables 3.1-3.3 (Dec. 1998).

better position since requiring that CLECs convince consumers to subscribe to both exchange service *and* DSL service in order to compete with ILECs in the retail DSL market *alone* represents a serious barrier to entry in the retail DSL market.

Bell Atlantic's new term and volume discount plan for retail DSL service makes it even less likely that CLECs can compete with that particular ILEC in the residential DSL market in the absence of line sharing. Under that plan, ISPs may purchase Bell Atlantic's DSL service at up to a 25 percent discount in return for a large volume commitment over a five-year period.[4] This discount plan seriously complicates the ability of CLECs to compete in the residential DSL market by further increasing the cost squeeze on CLECs that is produced by the absence of line sharing.

Not only does this new volume discount pricing plan further suppress the ability of CLECs to compete with Bell Atlantic in the residential DSL market in the absence of line sharing, it also makes it important that the Commission mandate line sharing *quickly* since Bell Atlantic is rapidly signing up large ISPs to its new plan. Once an ISP signs up to the Bell Atlantic plan, it is not likely that the ISP will purchase a substantial amount of DSL service from any CLEC during the term of that plan given the large volume commitment it would have made to Bell Atlantic and the significant penalties it must pay to Bell Atlantic under the terms of the plan if it fails to meet that volume commitment. If the Commission requires line sharing quickly, CLECs desiring to compete in the residential DSL market may be able to obtain ISP customers that have not yet signed up to the Bell Atlantic plan by beating Bell Atlantic's price, but it is very difficult to beat that price without line sharing.

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4. *See* Bell Atl. Tariff FCC No. 1, §§ 16.8(F)4 and 16.8(G).

2. Line Sharing Will Lead to More Efficient Use of Local Loops.

Line sharing also will benefit the public by ensuring more efficient use of loops.[5] Currently, ILECs provide exchange service to business and residential customers combined over approximately 95 percent of the nation's loops.[6] Without line sharing, only ILECs have access to the vast spectrum resource represented by the high-frequency bands of these loops, and much of the unused spectrum lies fallow since the exchange service provided by these ILECs occupies only a small fraction of the usable frequency spectrum on these loops. With line sharing, by contrast, the Commission will open the high-frequency local loop spectrum to competition and ensure that this resource is used more efficiently.

B. There Are Neither Technological Nor Operational Obstacles that Would Outweigh the Benefit to Competition that Mandatory Line Sharing Will Permit.

Not only will line sharing benefit the public, it can be implemented without either technological problems or severe operational problems. The Commission already has held that there are no technological obstacles that prevent it from requiring ILECs to share the lines of their exchange service customers with CLECs desiring to provide those customers with DSL service.[7]

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5. FCC Common Carrier Bureau, Industry Analysis Division, *Local Competition,* Tables 3.1, 3.3, 3.4, 3.5 (Dec. 1998).

6. The Commission has an obligation to ensure the efficient use of the spectrum resource represented by the high-frequency band of the existing local loop plant. *See* 47 U.S.C. § 151(a) (charging Commission with making available "a rapid, efficient, Nation-wide, and world-wide wire and radio communications service").

7. Deployment of Wireline Services Offering Advanced Telecom. Capability, *First Report and Order and Further Notice of Proposed Rule Making,* CC Dkt. No. 98-147 at ¶ 97 (rel. (continued...)

And the fact that ILECs already provide DSL and exchange services to a given end user over discrete frequencies of a single loop demonstrates conclusively an absence of technological impediments.

Nor are there insurmountable operational problems. While ILECs will need to develop systems to ensure smooth functioning of provisioning, repair, maintenance, and billing in an environment where an ILEC and CLEC use the same loop to provide different services to the same end user, Bell Atlantic's new volume DSL plan proves that these operational issues can be resolved satisfactorily. Under that plan as indicated above, Bell Atlantic sells its DSL offering to ISPs for resale to any end user that subscribes to Bell Atlantic's exchange service over the same loop. Bell Atlantic obviously believes that it can develop the systems necessary to ensure smooth functioning in an environment where Bell Atlantic and an *ISP* use different frequencies in the same loop to provide different services since the tariff makes clear that an ISP subscribing to the plan will be solely responsible for marketing, ordering, installing, maintaining, repairing and billing end users for the DSL service that the ISP provides to these users, and that Bell Atlantic will be solely responsible for performing these same tasks with respect to the exchange service that it provides these same users over the same loop.[8]

Although new procedures must be developed to permit a CLEC and ILEC to provide different services to a given end user over a single loop, it is appropriate for the Commission to instruct ILECs to develop all necessary procedures rather than seeking itself to define the required

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7. (...continued)
Mar. 31, 1999) (as appropriate, "*Second Advanced Services Order*" and "*FNPRM*").

8. Bell Atl. Tariff FCC No. 1 at § 16.8.F.4.a.

procedures.[9] Proceeding in this fashion would be consistent with the way the Commission has dealt with operational issues that result from other aspects of the ILEC/CLEC business relationship. For example, although the agency recognized that ILECs might face a variety of operational issues in providing CLECs with telephone number portability, the agency mandated that ILECs take whatever steps are necessary to provide portability rather than prescribing a specific method for providing portability.[10] Similarly, although the Commission recognized that ILECs might face operational issues in providing CLECs with reasonable and nondiscriminatory OSS functionality for UNE pre-ordering, ordering, provisioning, maintenance and repair service, the agency required that ILECs identify and solve all operational issues rather than assume these responsibilities for itself.[11]

C. The Commission Has Ample Authority to Mandate Line Sharing.

1. The Agency Can Require Line Sharing By Mandating Frequency Unbundled Loop UNEs Under Section 251(c)(3) of the Act.

The Commission may mandate line sharing by establishing two new frequency unbundled loop UNEs. The first would consist of frequencies on a DSL-capable loop above 4 kHz ("Frequency Unbundled DSL Loop"), and the second would consist of frequencies on a DSL-capable loop below 4 kHz ("Frequency Unbundled Voice Loop"). CLECs could subscribe to a Frequency Unbundled DSL Loop to provide any service in which data is transmitted in the high-frequency band as long

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9. *FNPRM* at ¶ 97 (asking commenters to help the FCC define operational issues).

10. Telephone Number Portability, *First Report and Order*, 11 FCC Rcd 8352, 8377, 8393-94 (1996).

11. *See Implementation of the Local Comp. Provisions in the Telecom. Act of 1996, First Report and Order*, 11 FCC Rcd 15499, 15767-68 (1996) ("*First Local Competition Order*").

as the ILEC uses other frequencies on that same loop to provide other services to the same user. CLECs could subscribe to a Frequency Unbundled Voice Loop to serve a given end user as long as the ILEC uses the other frequencies on that loop to provide a digital transmission service to that same user.

Section 251(c)(3) of the Act gives the Commission authority to establish frequency unbundled loop UNEs as the way to mandate line sharing. That statute authorizes the agency to require that ILECs provide a "network element" as a UNE if failure provide the element would "impair" CLECs in their ability to provide DSL service. Frequency unbundled loops plainly are "network elements." Section 3 of the Act defines network element either as "a facility or equipment used in the provision of a telecommunications service," or as the "features, functions, and capabilities" provided by means of such facility or equipment. A physical loop is a "facility or equipment used in the provision of a telecommunications service" and discrete frequencies within that loop are "features functions, or capabilities provided by that facility." Moreover, failure to require that ILECs provide these elements as UNEs will "impair" CLECs' ability to provide DSL service as that term is used in Section 251(d)(2) of the Act. In the UNE Remand proceeding, the Commission is considering the proper interpretation of the "impair" standard.[12] NAS has suggested that the Commission hold that the inability of CLECs to obtain a given network element would "impair" CLECs if the result would be a material increase in their cost to provide the service for

12. Implementation of the Local Comp. Provisions in the Telecom. Act of 1996, *Second Further Notice of Proposed Rulemaking*, FCC 99-70 (rel. Apr. 16, 1999) ("*UNE Remand Proceeding*").

which the element is sought.[13] Failure to provide frequency unbundled loops as a UNE for the provision of DSL clearly increases CLECs' costs in a material way since, as discussed above, CLECs currently must pay for a complete local loop, including both low-frequency and high-frequency bands, in order to provide service over only the high-frequency portion of the loop.

SBC claims that a 1996 decision by the Commission refusing to require that ILECs unbundle loops on a time-of-use basis justifies refusing to require that ILECs unbundle loops on a frequencies-used basis.[14] In fact, the rationale of the 1996 decision not to mandate time-based loop sharing actually justifies frequency-based loop sharing. There, as here, the Commission was concerned that its rules not "preclude the provision of certain services in favor of others."[15] The agency found that mandatory time-based line sharing might preclude the provision of ADSL or ISDN services by voice-grade services.[16] By contrast, frequency-based line sharing will not preclude the provision of any service. To the contrary, it will ensure that ILECs and CLECs have an ability to provide both exchange and DSL service since failing to mandate line sharing would give ILECs the ability to frustrate competition in the residential DSL market.[17]

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13. NAS Comments in UNE Remand Proceeding at 9.

14. SBC Comments in UNE Remand Proceeding at 82-83.

15. *First Local Competition Order*, 11 FCC Rcd at 15693 [¶385].

16. *Id.*

17. The underlying factual assumptions also may have changed since the *First Local Competition Order*. There, the Commission stated that "ISDN and ADSL occupy the same frequency spectrum on a loop as ordinary voice-grade services." *Id.* at n.833. ADSL is now provided over different frequencies than those used to provide ordinary voice-grade services.

2. The Prohibitions in Sections 201 and 202 Against Unjust and Unreasonable Practices and Discriminatory Treatment of Competitors Also Give the FCC Authority to Require Line Sharing.

Even if the Commission does not require ILECs to share unused loop frequencies as a UNE under Section 251 of the Act, it can mandate line sharing pursuant to Sections 201 and 202. Section 201 makes unjust or unreasonable "charges, practices, classifications and regulations" unlawful.[18] Section 202 makes it unlawful for any common carrier to engage in unjust or unreasonable "discrimination in its charges, practices, classifications, regulations, facilities, and services."[19]

An ILEC's refusal to share the unused high-frequency band of the loops on which it provides exchange service is an unjust and unreasonable practice in violation of Section 201. The Commission has previously held that ILEC practices that tend to deprive customers of the benefits of competition are unjust and unreasonable in violation of Section 201.[20] For example, it held in the *Expanded Interconnection Order* that ILECs may not impose upon competitive access providers ("CAPs") terms that make it "economically infeasible to combine CAP facilities with portions of the LEC network" to provide interstate special access service.[21] ILECs had done so by bundling a service that CAPs wanted to obtain from ILECs -- end user loops -- with a service that CAPs wanted

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18. 47 U.S.C. § 201(b).

19. 47 U.S.C. § 202(a).

20. Expanded Interconnection with Local Telephone Company Facilities, *Report and Order*, 7 FCC Rcd 7369, 7465 n.468, 7473-74 (1992) ("*Expanded Interconnection Order*"); *id.*, *Second Memorandum Opinion and Order on Reconsideration*, 8 FCC Rcd 7341, 7362 (1993).

21. *Expanded Interconnection Order*, *supra*, 7 FCC Rcd at 7473.

to provide themselves -- transport to IXC points of presence.[22] The Commission ordered ILECs to unbundle those two services to facilitate competition in the interstate special access transport market. Like the CAP services at issue in the *Expanded Interconnection Order*, DSL service is interstate special access service.[23] Moreover, just as the Commission viewed the ILECs' bundling of loops and transport as an unjust and unreasonable practice since it constrained competition in the interstate special access transport market, it is appropriate for the agency to view the ILECs' bundling of the DSL and exchange service frequencies of a loop as an unjust and unreasonable practice since it constrains competition in the residential DSL market.

An ILEC's refusal to let a CLEC use frequencies above 4kHz to provide DSL service to the ILEC's exchange customer also is unreasonably discriminatory in violation of Section 202. The practice is discriminatory because it imposes higher costs on a CLEC wishing to provide DSL service than the ILEC itself must pay to provide the same service. As discussed above, ILECs attribute no loop costs to their DSL service, while CLECs must pay the full price of loop. The practice is *unreasonably* discriminatory since there are no technical barriers to implementing line sharing and any operational issues can be worked out by the ILECs.

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22. *Id.* at 7373-74.

23. GTE Tel. Operating Cos., GTOC Transmittal No. 1148, *Memorandum Opinion and Order*, FCC 98-292 (rel. Oct. 30, 1998).

3. The Commission Also Has Power Under Section 201 of the Act to Require Line Sharing Since the ILECs' Failure to Permit Line Sharing Constitutes an Unlawful Tying Arrangement.

The Commission also can mandate line sharing under Section 201 of the Act since the ILECs' current practice, which effectively restricts an end user subscribing to ILEC exchange service to use of the ILEC's DSL service, is an unlawful tying arrangement. Illegal tying occurs when a vendor sells a product over which it has market power (the tying product) only upon condition that the buyer also purchase another product over which the seller has no market power (the tied product).[24] Tying arrangements are illegal because "'[b]y conditioning his sale of one commodity on the purchase of another, a seller coerces the abdication of buyers' independent judgment as to the 'tied' product's merits and insulates it from the competitive stresses of the open market. But any intrinsic superiority of the 'tied' product would convince freely choosing buyers to select it over others anyway.'"[25]

The facts in the present case are analogous to those at issue in *Kodak*.[26] There, the Supreme Court affirmed the appeals court's reversal of summary judgment in favor of Kodak. That case involved allegations by plaintiffs that Kodak had unlawfully tied the sale of repair service of Kodak machines to the sale of parts for those machines, thereby effectively giving consumers who wanted

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24. *Northern Pacific Ry. v. United States*, 356 U.S. 1, 5-6 (1958).

25. *Jefferson Parish Hospital Dist. v. Hyde*, 466 U.S. 2, 12-13 (1984) (quoting *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 605, (1953)). While the quoted language refers to "products" and "commodities," the Commission has made clear that the same concerns extend to communications services. *AT&T's Private Payphone Commission Plan, Memorandum Opinion and Order*, 3 FCC Rcd 5834, 5837 (1988)

26. *Kodak v. Image Technical Servs.*, 504 U.S. 451, 461-62 (1992).

Kodak parts no choice but to use Kodak repair service.[27] Just as consumers who wanted Kodak parts and independent repair service could not obtain them as a practical matter, consumers who want ILEC exchange service and a competitor's DSL service cannot obtain them as a practical matter since the only way an ILEC's residential exchange service customer can obtain a competitor's DSL service is to purchase a second loop. But the resulting price for DSL service is so high that the only realistic option for many residential consumers is to purchase the combined exchange/DSL package from the ILEC. This is the very essence of the impermissible tying doctrine: using market power in the exchange market (the tying product) to force consumers to purchase DSL (the tied product).[28]

The Commission already has held that Section 201(b) of the Act, which empowers the FCC to bar any ILEC practice that is "unjust or unreasonable," authorizes the agency to prohibit unlawful tying arrangements. For example, when AT&T offered its 800 service customers additional discounts if they also subscribed to AT&T's Software Defined Network ("SDN") service, the Commission condemned AT&T's action an unlawful tying arrangement under Section 201(b) given that AT&T had a market power in the 800 service market but not in the SDN market.[29]

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27. *Id.* at 457-58.

28. *Jefferson Parish, supra,* 466 U.S. at 12. When buying the package is the only realistic option for purchasers, a tying arrangement exists. *See, e.g., United Shoe Mach. Corp. v. United States*, 258 U.S. 451, 464 (1922); *Virtual Maintenance, Inc. v. Prime Computer, Inc.*, 957 F.2d 1318, 1323 (6th Cir.), *vacated on other grounds*, 506 U.S. 910 (1992).

29. *AT&T Communications, Revisions to Tariff F.C.C. No. 1 & 2, Memorandum Opinion and Order*, 5 FCC Rcd 3833 (1990), *recon. and review denied*, 7 FCC Rcd 7135 (1992). *See also AT&T's Private Payphone Commission Plan, Memorandum Opinion and Order*, 3 FCC Rcd 5834 (1988) (AT&T prohibited from tying "0+" service, over which it had market power, to competitive "1+" service).

D. The Commission May Permit ILECs to Determine the Pricing of the High-Frequency Band of a Local Loop As Long As It Requires Them to Attribute that Cost to Their Own DSL Offerings.

While one ILEC has urged the Commission not to mandate line sharing on the theory that it inherently requires government regulators to undertake the difficult task of setting the price that must be paid for using either the low-frequency or high-frequency bands of a physical loop, that theory lacks merit since there is no need for government price setting. Instead, the Commission can permit ILECs to set whatever price they want for use of loops on a frequency-unbundled basis as long as it requires ILECs to impute the same cost to their own DSL offerings. A cost imputation rule will both facilitate competition in the residential DSL market and help promote efficient use of ILEC loops.[30]

Section 251(d)(1) of the Act authorizes the Commission to let an ILEC allocate its TELRIC-based loop costs between the upper and lower frequency bands in whatever way the ILEC wants if the agency chooses to establish those bands as separate UNEs. That statute requires that the price of a UNE be both "nondiscriminatory" and "based on cost." Allowing ILECs to allocate their total TELRIC-based loop costs between two frequency bands in whatever manner they want as long as they impute those costs to their own services is nondiscriminatory because it ensures that CLECs

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30. The Commission may want to require that loop costs be attributed entirely to the carrier that uses the frequencies below 4 kHz until rules that regulate the manner in which an ILEC must recover loop costs from those who subscribe to switched access service are amended to ensure that customers of switched access service get the benefit of any offloading of loop costs to the carrier using frequencies above 4 kHz. Upon adoption of any such amendment, a portion of loop costs would be attributed to whichever carrier uses frequencies below 4 kHz for a given loop (whether the ILEC or the CLEC) and the remaining portion of loop costs would be attributed to whichever carrier uses frequencies above 4 kHz.

and ILECs use each frequency-unbundled loop UNE on the same terms. Giving ILECs discretion to allocate their TELRIC-based loop costs between the two frequency unbundled UNEs in whatever way they want is "based on cost" because it ensures that they recover only those costs.

If the Commission chooses to require line sharing pursuant to Sections 201 and 202, those statutes likewise authorize the agency to let ILECs allocate loop costs between the upper and lower frequency bands in whatever manner they want subject to an attribution requirement as long as ILECs recover their total TELRIC-based loop costs. For example, if the agency were to use its Section 201-202 authority to require that ILECs make available to CLECs the upper frequencies as a new DSL access service, the existing "new service" pricing rules would permit ILECs to set a price for their new DSL access service anywhere between the incremental cost of providing that service and the fully distributed cost of providing the service. The incremental cost of providing the service would be near $0 if the ILEC chose to recover its full loop costs from exchange service, while the fully distributed cost of the new DSL access service would be close to the existing TELRIC-based loop price if the ILEC chose to recover all of its loop costs from the new DSL access service.

II. THE FCC SHOULD ADOPT THREE NEW SPECTRUM MANAGEMENT RULES TO BALANCE THE NEED TO PROMOTE DEPLOYMENT OF ADVANCED SERVICES WITH THE NEED TO PROTECT ALL SERVICES FROM HARMFUL INTERFERENCE

In this part, we propose that the Commission adopt three new spectrum management rules that are designed both to facilitate development of advanced services that use DSL technology and to protect all telecommunication services from harmful interference. While interim rules adopted in the *Second Advanced Services Order* provide some guidance to companies presently deploying

DSL technologies, long-term solutions are necessary too in order to bring the benefits of advanced technologies to consumers.[31]

A. The Commission Should Permit Unrestricted Deployment of Any DSL Technology that Complies with a PSD Mask Set by ANSI Working Group T1E1.4.

While the Commission already has concluded that any loop technology that complies with the existing power spectral density ("PSD'") mask set by recognized industry standards organizations is presumed acceptable for deployment,[32] it should extend this rule to any DSL loop technology that complies with any *future* PSD mask established by ANSI Working Group T1E1.4. A PSD mask defines the maximum amount of energy that a signal may carry at any given frequency.[33] PSD masks control both received interference (*i.e.*, the interference that a signal will receive due to the presence of other potential disturbers in the binder group), and transmitted interference (*i.e.*, the interference that a potentially disturbing signal can produce in other signals in the binder group).[34] PSD masks are developed using worst case assumptions regarding the mix of

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31. The Commission adopted interim rules to (i) allow any loop technology that has been successfully deployed, or has been approved for deployment, to be deployed subject to a presumption of non-interference; (ii) provide nondiscriminatory access to ILEC spectrum management procedures; (iii) discontinue deployment of well-known disturbers, and (iv) encourage a "test and see" approach to the deployment of new technologies. *Second Advanced Services Order*. at ¶¶ 61-77.

32. *Id.* at ¶ 67.

33. *See id* at ¶ 61.

34. The Commission asked for comment on whether a generic PSD mask, *i.e.*, one that may be used for several different technologies, or a PSD mask calculated on an individual case basis is the better means to address spectrum compatibility. FNPRM at ¶¶ 82-83. The choice of which approach to take is an engineering decision based on the technical merits of each approach in various situations, and, as such, should be left up to the standards-setting body.

signals that may be present in a loop binder group to ensure that under all reasonable conditions any cross-talk between cable pairs will not result in objectionable interference. ANSI Working Group T1E1.4, the DSL Transmission Working Group, is the best choice for the development of PSD masks for DSL technologies since T1E1.4 is the working group within Technical Subcommittee T1E1 charged with developing standards for DSL transmission services. Moreover, T1E1.4, while not entirely free of bias, is as close to being representative of the industry as a whole as is possible to achieve. Concerns regarding the choice of T1E1.4 fall into two general categories. First, the Commission has expressed concern that T1E1 may be overly represented by LECs.[35] But this concern can be ameliorated if the FCC takes an active role in T1E1.4. Second, there is concern that the approach taken by T1E1 may be overly conservative. But this concern can be dealt with by providing a means, as described below, to deploy DSL technologies that have not yet received, or do not comply with, T1E1.4 standards.[36]

Not only should a DSL service that complies with a PSD mask established by T1E1 be presumed lawful, the Commission should make this presumption irrebuttable. Under current rules, an ILEC may rebut the presumption that a DSL service is acceptable for deployment by demonstrating that the technology it uses is significantly degrading the performance of other advanced services or legacy services.[37] The FCC should not give ILECs this opportunity to delay introduction of new technologies in the case of services that meet the PSD mask developed by

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35. See FNPRM at ¶ 81.

36. *See infra*, Section II.B.

37. *Second Advanced Services Order* at ¶ 68.

T1E1.4. A CLEC that deploys a standard technology should not exclusively bear the risk that actual harm occurs after the technology is widely deployed. Instead, whenever a service deployed to a new customer causes interference to services already being provided to existing customers, the newcomer service provider should be required to correct the interference, regardless of which technology the interfering and interfered-with services are using.

B. The Agency Should Apply a Rebuttable Presumption that DSL Technologies Are Acceptable for Deployment If They Have Been Deployed Successfully Even If They Do Not Comply with a T1E1.4 PSD Mask

For three separate reasons, any DSL technology that has been successfully deployed without significantly degrading the performance of other services should be presumed acceptable for deployment even if the technology either does not comply with an existing T1E1.4 PSD mask or uses technology for which no mask has been adopted. First, industry standards necessarily are conservative since the standards-setting body is concerned that no harm can possibly occur under any conceivable conditions. These worst-case conditions, while appropriate for standards setting, are highly unlikely to occur in practice. A technology can be widely deployed without giving rise to anything near the worst case scenario for interference, and under these conditions no actual harm will occur from the deployment. Second, T1E1.4 traditionally has been heavily influenced by ILECs. Even with increased participation by CLECs and the FCC, some bias towards ILEC interests may be inevitable. Allowing the deployment of DSL technologies that are excluded by the standards-setting process (subject to a presumption of acceptability) will help alleviate any bias in the standards process by giving CLECs a means to deploy these technologies and realize potential benefits to the public. Third, standards -setting bodies can be slow to act. Even though a new

technology eventually may be standardized, a presumption of acceptability will allow introduction of the new technology and its deployment pending adoption of a standard.

In order to allow a new technology to obtain the benefit of the presumption of acceptability for deployment, the Commission should require an ILEC to enter into a 6-month test of any new DSL technology upon request.[38] Successful conclusion of such a test should give rise to the presumption that the new technology is acceptable for commercial deployment.

C. The Use of Loop Binder Group Management Rules by ILECs Should Be Barred.

ILECs collect together the individual copper wire pairs making up local loops and bind them into separate cables as a way to simplify the administration of the local loop plant. These cables typically consist of many binder groups, each holding either 25 or 50 pairs of wires. Since the wires making up a binder group travel for long distances in close proximity to each other, signals on these wires are particularly susceptible to cross-talk interference, in which a strong signal in one or more wires induces a corresponding weaker signal in an adjacent wire.

Binder group management refers to rules and policies regarding the assignment of services to loops within the same or adjacent binder groups. The only purpose of binder group management is to avoid cross-talk between signals on the individual wires making up the binder groups. However, since adherence to a PSD mask accomplishes the same goal, the use of PSD masks renders binder group management unnecessary.[39]

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38. NAS understands thatSouthwestern Bell currently offers CLECs a 12-month test of any new technology.

39. While ILECs have long used binder group management in their deployment of Alternate (continued...)

Binder group management is not necessary to prevent harm to the telephone network from the deployment of DSL services. Since DSL services are removed from the telephone network as soon as they are terminated in the central office (by means of a POTS splitter), any harm would have to be inflicted between the customer premises and the central office. Thus, the only possible sources of harm to the network from the deployment of DSL are (i) cross-talk between local loop cable pairs and (ii) the connection of equipment at the subscriber premises. The Commission already has conceded that neither of these possible sources of harm can materialize in practice. First, cross-talk interference between voice services and DSL services cannot occur since the two types of service operate in different areas of the spectrum.[40] Second, the Commission's rules for DSL technology are designed to permit connection of equipment to the network with "reasonable confidence that this technology will not impair traditional voice band services."[41]

Nor is binder group management necessary as an interim measure until PSD masks are developed for all DSL technologies. Even assuming that the pace of DSL deployment accelerates following adoption of rules facilitating competition, for the foreseeable future actual DSL service will be provided over very few local loops sparsely distributed throughout the ILECs' loop plant.

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39. (...continued)
Mark Inversion ("AMI") T-1 service, this does not change the fact that binder group management is unnecessary with the use of PSD masks. The PSD mask for AMI T-1 was not designed for compatibility with other signaling technologies, making binder group management the only way that AMI T-1 can be successfully deployed. By contrast, the PSD masks developed for DSL technologies are designed for compatibility with existing technologies under worst-case assumptions.

40. *See Second Advanced Services Order* at ¶ 66 n. 166.

41. *Id.* at ¶ 66.

Interference, if it occurs at all, only will surface when an appreciable concentration of DSL loops creates a combined disturbing signal to a sensitive receiver. These conditions will be present only when DSL technology begins to reach maturity, and by that time DSL standards will have been perfected.

In addition to being unnecessary, binder group management is harmful to competition. Binder group management places an extra administrative layer in an already unwieldy ordering and provisioning process. At best, binder group management complicates the deployment of competitive DSL services, slowing the delivery of advanced services to consumers and raising the costs of service. At worst, binder group management is an opaque process that can easily be manipulated by ILECs for anticompetitive purposes.

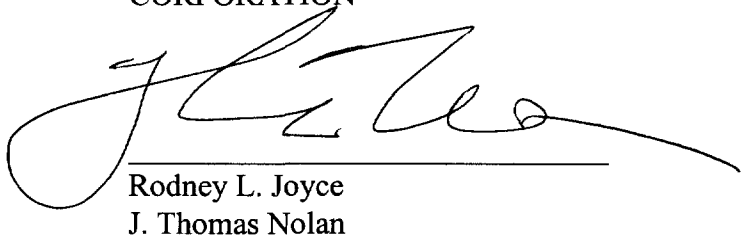
CONCLUSION

The Commission's earlier decisions in this proceeding have evidenced its commitment to encourage facilities-based competition in the provision of DSL services. While its decisions on interconnection and collocation have helped remove barriers to competitive entry, significant work remains to prevent ILECs from monopolizing entire market segments and placing anticompetitive obstacles in the paths of competitors. To make good on its commitment to competition, the Commission needs to give its highest priority to implementing line sharing rules to open up to competitors the vast untapped resource represented by the high-frequency transmission capacity of loops used for ILEC local exchange service. In addition, to give order to the deployment of different

varieties of DSL service, the Commission should adopt spectrum management rules as described herein and prevent ILECs from imposing arbitrary management rules of their own.

Respectfully submitted,

NETWORK ACCESS SOLUTIONS CORPORATION



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